

**Amendments to the Claims**

**This listing of claims will replace all prior versions, and listings, of the claims:**

1. (currently amended) A processor-based method, comprising:  
    regressively clustering pixels of an image with respect to a color model characterizing the image by regressing functions that correlate pixels having an attribute of similar value with respect to a first primary color of the color model and clustering pixels of the image into distinct groups based upon the regressed functions; and  
    segmenting the image based upon said regressively clustering such that retrievable segments are formed within a memory coupled to a micro-processor conducting the processor-based method.
2. – 3. (canceled)
4. (currently amended) The processor-based method of claim 1-3, wherein said attribute comprises brightness.
5. (currently amended) The processor-based method of claim 1-3, wherein said attribute comprises a degree at which the first primary color changes from pixel to pixel.
6. (currently amended) The processor-based method of claim 1-3, wherein said regressively clustering further comprises regressing functions which each correlate pixels having an attribute of similar value with respect to a second primary color of the color model.
7. (original) The processor-based method of claim 6, wherein said regressively clustering further comprises regressing functions which each correlate pixels having an attribute of similar value with respect to a third primary color of the color model.
8. (original) The processor-based method of claim 7, wherein said clustering comprises

clustering the pixels based upon the regressed functions of the first, second and third primary colors.

9. (original) The processor-based method of claim 1, further comprising mapping the pixels of the image into a three-dimensional color space prior to said regressively clustering the pixels.

10. (original) The processor-based method of claim 9, wherein said mapping the pixels is with respect to time.

11. (original) The processor-based method of claim 1, further comprising displaying at least one of the image segments independent of another of the image segments.

12. (currently amended) A tangible computer readable storage medium having instructions for causing a computer to execute a method, ~~comprising program instructions executable by a processor for:~~

determining a number of segments by which to distinguish portions of an image;  
generating a set of functions, for each segment, ~~that which~~ correlate pixels of the image having an attribute of similar value relative to a color model criteria within the image, wherein each of the set of functions is based relative to a different primary color of ~~the a~~ color model characterizing the image;

regressing, for each segment, the set of functions; clustering pixels of the image into different groups based upon the regressed sets of functions; and

repeating said regressing and said clustering sequentially.

13. (currently amended) The tangible computer readable storage medium of claim 12 having instructions for causing the computer to execute the method that further comprises, wherein the program instructions for clustering the pixels comprises program instructions for:

partitioning pixels into distinct subsets prior to said regressing; and

re-partitioning the pixels into the distinct subsets subsequent to said regressing.

14. (currently amended) The tangible computer readable storage medium of claim 13 having instructions for causing the computer to execute the method that further comprises, further comprising program instructions executable by the processor for terminating said repeating when a partition of pixels within the subsets does not change from said, partitioning to said re-partitioning.

15. (withdrawn) The storage medium of claim 12, wherein the program instructions for clustering the pixels comprises program instructions for:

- determining distances between values of the pixels and the functions;
- computing probability and weighting factors from the determined distances, wherein the program instructions for regressing comprises program instructions for regressing the functions using the probability and weighting factors; and
- soft-partitioning the pixels into the different groups based upon the regressed functions.

16. (withdrawn) The storage medium of claim 15, further comprising program instructions executable by the processor for:

- calculating harmonic averages of the distances;
- computing a change in harmonic averages for the functions prior to and subsequent to said regressing; and
- terminating said repeating when the change in harmonic averages is less than a predetermined value.

17. (currently amended) The tangible computer readable storage medium of claim 12 having instructions for causing the computer to execute the method that further comprises, wherein the program instructions for clustering the pixels comprises program instructions for:

determining probability factors of the pixels correlating to the functions, wherein the program instructions for regressing comprises program instructions for regressing the functions using the probability factors; and

soft-partitioning the pixels into the different groups based upon the regressed functions.

18. (currently amended) A system, comprising:

an input port configured to receive an image; and

a processor configured to: regress functions ~~that which~~ correlate pixels of the image having an attribute of similar value relative to a color model, the functions being regressed with respect to different primary colors of ~~the~~ a color model characterizing the image;

cluster the pixels into distinct segments using the regressed functions; and  
reiterate said regress and cluster.

19. (original) The system of claim 18, wherein the processor is further configured to map the pixels into the color model.

20. (original) The system of claim 18, wherein the input port is configured to receive a static image.

21. (original) The system of claim 18, wherein the input port is configured to receive a video image.

22. (original) The system of claim 18, further comprising a display device configured to display the image and the distinct segments.

23. (currently amended) A system, comprising:

a first means to receive an image; and

a second means for regressively clustering pixels of the image with respect to a color model characterizing the image to produce distinct segmentations of the image by

regressing functions that correlate pixels having an attribute of similar value with respect to a first primary color of the color model and clustering pixels of the image into distinct groups based upon the regressed functions.

24. (original) The system of claim 23, further comprising a third means to characterize the pixels into a three-dimensional color space.

25. (original) The system of claim 23, wherein the third means is configured to characterize the pixels into a red-green-blue color space.

26. (original) The system of claim 23, wherein the third means is configured to characterize the pixels into a cyan-magenta-yellow color space.

27. (original) The system of claim 23, wherein the third means is configured to characterize the pixels into the three-dimension color space with respect to time.